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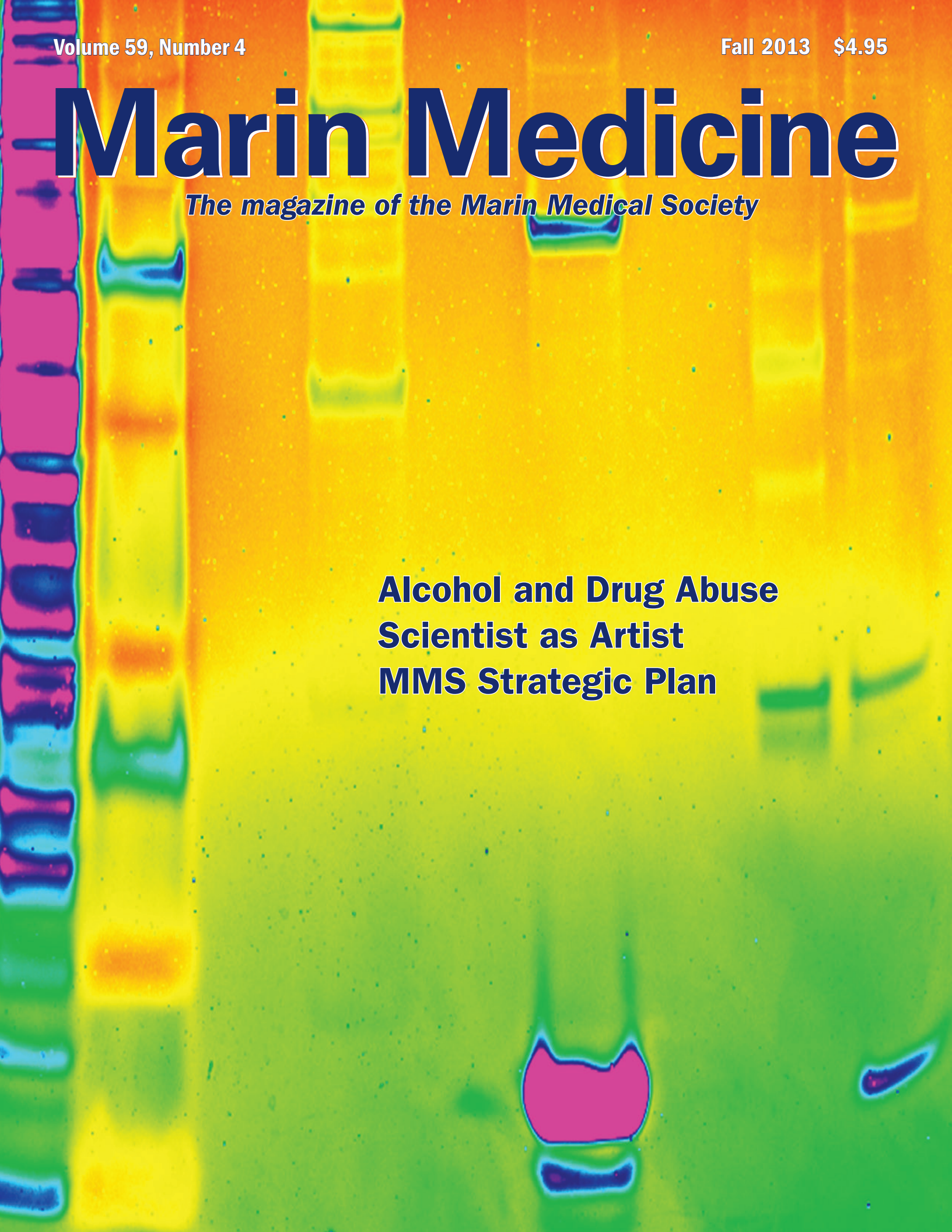

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New Questions for Old Problems

Irina deFischer, MD

A few weeks ago, my colleagues at Kaiser Permanente and I started screening for unhealthy alcohol use in all patients 18 and older visiting our offices. I have been astounded at the number of people I see every day whose responses suggest alcohol abuse! Unlike our traditional social history questionnaire, which just asks how many drinks a person has a week, the new questionnaire has three main questions. Q1 screens for binge drinking by asking how many times in the past 3 months the patient has had 5 or more alcoholic drinks in a day (for men aged 18–64) or 4 or more drinks in a day (for women 18 and over and for men 65 and over). Q2 asks how many days per week the person drinks alcoholic beverages, and Q3 asks how many drinks they have on a typical day.

When a patient screens positive for unhealthy alcohol use—defined as greater than 7 drinks a week for women and older men, greater than 14 drinks a week for men 18–64, or any binge-drinking episodes in the last 3 months—I ask two follow-up questions to screen for alcohol dependence. A positive answer prompts me to offer a referral to our chemical dependency unit for further evaluation. A negative response results in brief counseling about unhealthy drinking, accompanied by written information.

Needless to say, alcohol screening makes for longer and more interesting visits! Some patients are receptive; others vigorously deny that their drinking habits are unhealthy. It's helpful when I can point out how cutting down on alcohol might improve a chronic medical problem such as hypertension, acid reflux, insomnia, erectile dysfunction or obesity—though the gentleman who came in for rosacea the other day was adamant the 4–5 drinks he's been having daily for years were not a problem! Binge drinking among teens and young adults is a big concern, not only for young men who are notorious for using poor judgment while drunk, but increasingly for women as well.

In addition to screening for alcohol abuse, we should also be cognizant that many of our patients are using drugs other than the ones we prescribe for them. Unfortunately, some of the most commonly used recreational drugs are prescription narcotics. This often happens because pill bottles are left where they're accessible to family members, household employees and visitors, who help themselves, or in the case of diversion, where patients sell their prescription narcotics for a profit.

The mandatory pain CME requirement implemented in California in 2001 was prompted by physician undertreatment of pain. Now the pendulum has swung the other way, and we are being faulted for overprescribing. The FDA has instituted a risk evaluation and mitigation strategy (REMS) program, and the California Medical Board has imposed stringent documentation requirements and a standard of in-person visits every 6 months to monitor patients on long-term narcotics.

In our practice, we use standardized narcotic agreement forms that review risks and benefits, as well as the monitoring requirements. Some of the risks include sleep apnea, depression, hypogonadism and osteoporosis. One of my chronic pain patients recently broke both ankles when he fainted and fell to the ground. Urine drug testing should also be done on a regular basis.

The California Department of Justice CURES/PDMP program is a useful online resource to uncover "doctor shopping" patients who visit multiple emergency departments and physician offices to obtain their narcotics. Other helpful resources include multidisciplinary pain programs—where patients learn to use meditation, exercise, and relaxation techniques—and pain specialists, who can prescribe buprenorphine and wean patients down from high doses of narcotics. One of my patients with chronic back pain who had been notorious for drug-seeking behavior was initially reluctant to participate in a pain program, but he is now well-controlled on a relatively low dose of narcotics and daily swimming in his backyard pool. Acupuncture can be a useful modality for pain control as well.

Unfortunately, few of us feel adequately prepared through our medical school and residency curricula to recognize and treat alcohol and drug problems or chronic pain. The articles in this issue of *Marin Medicine,* which focuses on drug and alcohol abuse, offer useful advice to help us take better care of our patients in these areas. ◇

Dr. deFischer, a family physician at Kaiser Petaluma, is president of MMS.

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Evidence-Based Prescription of Opioids for Chronic Pain

Jeffrey Harris, MD

The opioid hydrocodone is now the most-prescribed drug in the United States, and opioids in general are the most-prescribed drug class. This trend might make sense given surveys that have estimated chronic pain prevalence at 15–60% of the population, with prevalence increasing with age. Many physicians have been told in marketing presentations, mandated training and CME sessions that opioids are well-tolerated, safe and effective for chronic non-cancer pain (CNCP) at any level, and that it borders on malpractice not to use opioids for CNCP. In the mid-1990s, the manufacturer of OxyContin printed coupons for free samples in newspapers.

The vast majority of hydrocodone and oxycodone used worldwide is prescribed in the U.S., mostly for CNCP. Prescriptions for CNCP account for most of the increase in opioid prescription in the last 15 years. A relatively small portion of these patients—those who use high and escalating doses, and often multiple opioids—account for a significant volume of opioids prescribed. Older women, patients on benzodiazepines and patients with psychiatric comorbidities are disproportionately represented.

Dr. Harris is an urgent care physician at Kaiser San Rafael and a practice guideline methodologist for the Kaiser Permanente Care Management Institute and the American College of Occupational and Environmental Medicine.

Most opioids are prescribed by primary care physicians. According to pharmacy data analysis, about 20–30% of physicians prescribe about 80% of total opioids by morphine equivalent dose (MED).[1] In physician surveys, more members of this "high prescribing" group believe that opioids are effective, compared to physicians who prescribe significantly less opioids.[2] Most physicians are aware of the adverse effects of opioids, but the former group appears to make a different benefit-to-risk judgment. In several studies, the opioid-related death rate among high prescribers' patients is much higher than the community rate.[3] Interestingly, high prescribers also make fewer psychiatry and physical therapy referrals, and they are less likely to include exercise, movement therapy, non-opioid pain medications, and cognitive behavioral therapy in their treatment plans.

Patients in the "pain community" talk to each other and know which physicians will prescribe chronic opioids. There appears to be an interaction between supply and demand, with a resulting rapid growth in prescription.

Discussions about chronic opioid use often generate more heat than light. Pharmaceutical companies, pharmacy-funded advocacy groups and researchers, and some practicing physicians assert that chronic opioids are safe and effective regardless of dose. The JCAHO "Pain as the Fifth Vital Sign" standard and the Federation of State Medical Boards' Model Policy remain in place. (Materials for these efforts and a good deal of training were funded by opioid manufacturers, according to investigative reports.)[4] Advocacy groups continue to call for greater access to opioids. The recent Institute of Medicine report, *Pain in America*, made the same recommendation based on testimonials, which contradicted its own evidence review.[5]

Whether the benefits of opioids exceed the harms remains an open question, however, according to well-conducted systematic reviews.[6] Observational studies published more than a decade ago demonstrated that one-half to two-thirds of patients prescribed chronic opioids discontinue them due to side effects or lack of effectiveness.[7] The rising number of prescription opioid overdoses and deaths, which has paralleled the rapid increase in opioid prescription—and now exceeds deaths from drugs of abuse and motor vehicle trauma—has prompted calls for reassessing benefits, risks, harms and "responsible prescription" of opioids.

A basic principle of evidence-based medicine, and indeed medicine in general, is to prescribe only proven effective treatments for which benefits substantially outweigh risks. Objective evidence of benefit for chronic opioids is lacking. A growing body of observational evidence demonstrates substantial personal and societal adverse effects of chronic opioids. Clearly, a careful assessment of the evidence is needed to guide responsible, safe and effective practice.

Case Definition and Effects

A clear case definition of CNCP, based on anatomy or physiology, is

needed for quality research, accurate diagnosis and effective treatment; but there is no such case definition for most CNCP. Instead, the commonly used definitions are chronological. CNCP is defined as pain lasting longer than expected tissue healing, or pain persisting for durations ranging from one to six months. There are no clear anatomic or physiologic mechanisms known for most cases of CNCP. Imaging does not correlate with pain complaints. The Federation of State Medical Boards notes that chronic pain "may or may not be associated with an acute or chronic pathologic process that causes continuous or intermittent pain over months or years."[8]

Pain perception is complex, with a significant if not dominant psychological component.[9] Pain perception includes a sensation (peripheral or central), an emotional reaction to the sensation (modulated by previous experiences and culturally or experientially based expectations), and then a resulting feeling of distress and complaints of suffering. Distress may be induced or exacerbated by fear of pain, anxiety, panic, depression or analogy with prior trauma. Across studies, the higher the level of distress, the higher the doses of opioids used. The important point is that pain cannot be reduced to a biomechanical model.

Opioids have several documented effects in addition to pain relief, including euphoria, activation, sedation and reduction of emotional distress. Opioids are also asserted to improve function. It is difficult to separate these effects when assessing "effectiveness." Non-pain effects reduce symptoms of distress, depression, anxiety and posttraumatic stress, although opioids are not FDA-approved for these purposes. If these comorbidities exist, it is difficult to isolate which symptoms are improved without careful and inclusive experimental design or clinical history. The fact that opioids are now the most commonly used recreational drugs most likely reflects effects other than pain relief.

In many cases, opioids become ineffective for pain relief over time and increase perceived pain. Possible mechanisms for opioid-induced hyperalgesia include spinal glial cell amplification of pain impulses, changes in brain pathways, suppression of neuroendocrine hormones, suppression of REM sleep, and binding or reduction of opioid receptors. These effects are likely dose-related. Conversely, dose escalation is a sign that opioids are no longer effectively relieving symptoms.

As noted above, population studies indicate that most patients discontinue opioids for CNCP for lack of effect and/or unacceptable side effects. Patients who continue to use opioids tend to escalate doses over time, use more than one opioid for "breakthrough pain" or "pseudo-addiction," and use other drugs that affect mood. The higher the dose of opioids, the more likely that patients will have one or more coexisting psychiatric diagnoses. Causes of this situation include the psychoactive effects of opioids (mood elevation, sedation, relief of anxiety), reward center stimulation even without addiction, misuse, addiction and dependence.

Benefits and Harms

Multiple well-conducted systematic reviews of pain studies have concluded that there is no quality evidence for effective relief of chronic pain with opioids. These reviews were conducted by the Cochrane Collaboration, the Veteran's Administration, the American Pain Society and several other research groups.[10–12] Because of this lack of evidence, many European governments do not pay for opioids for CNCP.

None of the pain studies appraised by these systematic reviews lasted longer than 120 days, and patient selection was often poorly defined. Patients with psychiatric comorbidity or legal issues were excluded, making extrapolation to clinical practice questionable. Dropout and crossover rates were unacceptably high, and follow-up data collection was irregular. Opioids were generally not compared to other treatments, and harms were rarely assessed. There was also significant conflict of interest: most if not all of the studies were supported by pharmaceutical companies.

Improvement in function associated with chronic opioid use has not been demonstrated, nor has increased return to work. In fact, return to work is delayed when acute or chronic opioids are used.[13] Contrary to popular assertions, chronic opioids do have significant adverse effects. Observational studies have documented negative effects on most organ systems (see table). Many of these effects appear to increase as the average daily dose increases. More "puzzle pieces" about the effects of chronic opioids appear as more studies are done. The earlier claims of safety made by pharmaceutical manufacturers are not supported by quality evidence. In fact, some manufacturers have been fined or warned by the FDA for making false claims or ignoring adverse effects.

A number of patient groups have documented increased risk of adverse effects of chronic opioids. Risks are related to dose, concurrent medications, drug and general metabolism, comorbid conditions, and the ability to manage medication use. Physicians should exercise great caution in managing such patients and fully document their histories, examinations, treatment plans, and full informed consent.

The most obvious risk, given the relationship between dose, overdose and mortality, is a daily average dose of opioids over 20 to 100 mg MED (depending on the guideline). Concurrent use of more than one opioid, benzodiazepines and other psychiatric medications increases risk of overdose. Mental health and current or past substance use disorders are also associated with increased risk. Women appear to metabolize opioids differently, and may become pregnant, increasing risk. Younger patients appear to have increased risk of misuse as well as the risk of longer lifetime exposure. Drug metabolism and clearance, balance, and cognitive function decrease, and psychiatric disorders and concurrent medication use increase with age, increasing risk. Medical comorbidities such as lung disease, obesity, heart disease, renal

Adverse Effects of Chronic Opioid Use

SYSTEM	EFFECT	SECONDARY EFFECT
CARDIOVASCULAR	Myocardial infarction	
	Orthostatic hypotension	
	QT prolongation	Arrhythmias
GASTROINTESTINAL	Gastroparesis	Nausea
	Reduced colon motility; spasm	Constipation, bowel obstruction
	Biliary spasm	Pain
GENITOURINARY	Exacerbation of BPH	Urinary retention
ENDOCRINE	Suppression of testosterone	Osteoporosis, feminization, reduction of muscle mass, strength
	Suppression of LH, FSH	Amenorrhea
	Adrenal suppression	Fatigue, hypotension, electrolyte changes
IMMUNE	Tumor spread	
	Allergic reactions to medication	Rash, dyspnea, pruritus, edema
NEUROLOGICAL	Impairment of executive function	Outbursts, inappropriate behavior, limit testing, violence, reduced impulse control
	Frontal lobe atrophy, other changes	Alterations in executive function, emotional response
	Brain damage from overdose or apnea-induced hypoxia	
	Cognitive impairment	
	Headache	
	Increased CNS pressure	
	Hyperalgesia	Dose escalation
	Altered sense of taste	
	Reduced seizure threshold	
	Confusion	
	Drowsiness, somnolence	
	Increased reaction time	Unsafe operation of machinery
	Impaired coordination	Unsafe operation of machinery, falls
	Impaired concentration	
PSYCHIATRIC	Non-medical use	Overdose
	Mood elevation, euphoria	
	Reduction in anxiety; tranquility	
	Sedation, drowsiness	
	Depression	
	Release of inhibitions	
	Reward stimulation	
REPRODUCTIVE	Birth defects	
	Neonatal withdrawal	
	Erectile dysfunction	
RESPIRATORY	Respiratory depression	Death
	Central sleep apnea	
	Obstructive sleep apnea	
	Pneumonia	
	Exacerbation of asthma and COPD	Hypoventilation
VESTIBULAR	Reduced balance	Falls, fractures

[References available upon request.]

or liver compromise, and pre-existing sleep apnea increase risk as well.

Indications and Best Practices

As CDC Director Dr. Thomas Frieden recently noted, there are no clear indications for opioids for chronic pain.[14] In the absence of clear indications, virtually all practice guidelines, based on consensus, state that chronic opioids should be used only as a last resort, after documented failure of all other modalities of pain management. Guidelines recommend that opioids only be used as part of a multimodal treatment plan including exercise, non-opioid pain medications, cognitive behavioral therapy, and effective treatment of psychiatric comorbidities. In the absence of clear means of determining effectiveness in advance, many guidelines discuss individual trials of opioids, with discontinuation for lack of effect on pain and function or unacceptable adverse effects. Such trials require careful and clear documentation of safety and improvement toward agreed upon goals.

Guidelines specifically advise against use of chronic opioids for fibromyalgia, headache, poorly defined pain, somatoform disorder, low back pain with psychological components, patients with a history of abuse, and chronic pain syndrome. The guidelines also note reduced treatment effectiveness of concurrent psychiatric disorders in patients with anxiety, depression, PTSD, bipolar disorder, substance abuse, personality disorders and emotional distress.

Analyses of guidelines and careful consideration of the documented risks and benefits of acute and chronic opioid use suggest best practices for the responsible use of opioids, particularly on a chronic basis for CNCP. Basic principles include careful and complete examination, regular in-person reassessment, and frequent reconsideration of harms and benefits documented in a regularly updated, specific treatment plan. State Medical Board investigations of complaints of opioid-related deaths note the need for documenting these practices. The investigations also call for psychiatric assessments of patients prescribed chronic opioids or multiple medications for CNCP, along with an exit strategy—implying that opioids should be used as treatment of a specific condition rather than lifelong palliative care for a symptom without known pathology.

It is important to keep in mind that higher-dose patients and some others often have difficulty managing or controlling opioids, so the physician must ensure a supervisory and prescriptive role to ensure safety and effectiveness. This is a different and difficult role for some physicians, since it may involve refusal to provide opioids or other medications to protect the patient. Dr. Mitchell Katz of the San Francisco Department of Public Health recently suggested developing guidelines with a dose ceiling and risk considerations to provide an authority for physicians to cite when declining to prescribe opioids.[15]

Managing opioids for chronic pain patients is difficult and time-consuming, but careful management is what's needed for patient safety and effective treatment. ◇

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New and Emerging Drugs of Abuse

Howard Kornfeld, MD, Andrew Kornfeld, BA, BS, Cara Eberhardt, BA

Stimulants (bath salts), synthetic cannabinoids (spice) and opioid receptor agonists (krokodil) are among the new drugs of abuse that are receiving a boost in popularity. Users who want to beat drug tests or more easily obtain psychoactive drugs are turning to these substances in greater numbers.

The human relationship with psychoactive substances dates back thousands of years and continues to the present day, through our often regular consumption of caffeine, nicotine and alcohol. In addition to helping patients manage these legal and universally available substances, physicians must also contend with a more diverse group of licit and illicit drugs, including heroin, cocaine, amphetamine, cannabis, and various prescription medications.

To make matters worse, these are no longer the only drug scenarios to consider when evaluating patients. This country and the world face a growing epidemic of substance abuse that is complicated by the emergence of an ever-greater variety of novel and dangerous compounds, such as "bath salts," "spice" and "krokodil." The rising popularity of some of these drugs is due, at least in part, to their perceived legal status—a status acquired through creative use of legal but potentially toxic chemicals. Other substances have emerged thanks to the globalization of lesser-known indigenous plants.

The phenomenon of "new and emerging" drugs is actually not new. Tobacco, for example, was once a new and emerging drug introduced to the Old World from the New in the 1500s. Heroin, amphetamine and LSD were creations of earlier generations of pharmaceutical chemists in 1874, 1929 and 1943, respectively. The sheer number and variety of new compounds emerging in the 21st century, however, is creating public health dangers that dwarf previous challenges and take us into uncharted territory.

What is driving the interest in these new drugs of abuse? Some observers argue that attempts by law enforcement and government to monitor mainstream drugs of abuse encourage drug users to seek out compounds that will not show up on standard drug tests or carry the same legal risks. The unintended consequence of the enormous effort to control well-known drugs of abuse may be the emergence of far more complex, seductive and toxic compounds. Memorably described as a giant game of "chemical whack-a-mole," nearly every time a novel compound becomes scheduled, a somewhat different drug appears, varying just slightly in chemical structure.[1]

Bath salts have recently entered the media spotlight via their alleged involvement in several bizarre incidents with common themes. Users of these drugs have become paranoid and even violent, attacking both people and inanimate objects, rolling naked through traffic or climbing tall buildings—appearing to have lost any sense of reality.[2]

Nearly all bath salts are derivatives of a Schedule I compound called cathinone that shares structural similarities to amphetamine and appears endogenously in the khat plant. The two most common cathinones found in bath salts are MDPV and mephedrone, which produce a myriad of effects, including mental and physical stimulation, euphoria, sexual arousal, involuntary movements (twitches), extreme agitation, tachycardia, hypertension, hyperventilation and hyperthermia.[2] Users often feel the need to compulsively re-dose as the drug starts wearing off.[3]

Bath salts can last for many hours, with some effects lasting for days, especially vivid hallucinations and delu-

Dr. Kornfeld is the medical director of Recovery Without Walls, a Mill Valley pain and addiction clinic. Andrew Kornfeld has degrees in psychology and neuroscience; Ms. Eberhardt's degree is in psychology. Both are pre-meds who work with Dr. Kornfeld.

sions. In a recent case, Dickie Sanders, a 21-year-old semi-professional BMX rider, committed suicide after ingesting MDPV. His parents reported that his behavior changed radically after he took a product called "Cloud 9," which produced several days of terrifying hallucinations, finally prompting him to take his own life.

These compounds, especially MDPV, do not appear to follow a normal dose-response curve. In the last few years, researchers have uncovered a unique pharmacology that may explain why the drug lasts so long. MDPV is a dopamine reuptake inhibitor, acting similarly to cocaine, while mephedrone floods the synapse with dopamine in a way that has been likened to amphetamine. The effects of bath salts have been described as a combination of amphetamine and cocaine, except that MDPV appears to be as much as 10 times stronger than cocaine. Using patch clamping on frog oocytes, researchers have postulated that MDPV (given its unique molecular structure) stays bound to a dopamine transporter for extended periods of time, essentially blocking its function completely. MDPV is thus referred to as the drug that "doesn't let go."[4]

Synthetic cannabinoids first appeared in Europe in 2005 and in the United States in 2009. Known as spice or K2, these drugs were initially sold in smoke shops, gas stations and other small stores and were labeled as "herbal incense" that was "not for human consumption." They have since disappeared from these venues, but "herbal incense" is still widely available online.

Targeting the same cannabinoid receptor as THC, the most common cannabinoid found in marijuana, these compounds are classified as aminoalkylindoles and cyclohexylphenols. The effects are similar to cannabis, with superimposed agitation, hallucinations and increased toxicity sometimes leading to tachycardia and seizure. The dried leaves of dozens of different plants, other than cannabis, are used as a "base" to absorb the synthetics for smoking. Some of these botanicals have psychoactive properties in themselves. Like bath salts, synthetic cannabinoids have been involved in several incidents reported by the media, including a suicide and the hospitalization of a Texas teen who suffered severe neurological damage.

The United States is not the only nation struggling with an epidemic of new substance misuse. In Russia, the drug krokodil is growing in popularity despite horrifying health consequences and an average life expectancy of just 2–3 years after beginning chronic use. Krokodil contains desomorphine (a mu-opioid agonist) as well as toxic impurities, and it has sprung up as an alternative to heroin, which is difficult and expensive to obtain in Russia.

Krokodil represents an opiate version of methamphetamine—the high is similar to heroin, but it is cooked up using gasoline, codeine pills and red phosphorous (found on the sides of matchboxes). One of the most dangerous side effects, from which the drug derives its name, is the necrosis that occurs at the site of injection, giving flesh a reptilian appearance. The skin and soft-tissue infections that many users experience are typically responsible for the high rate of mortality associated with krokodil.[5] These infections are likely the result of impure solutions that are injected directly into the skin, leading to lesions and abscesses.

In the United States, the "analog drug" section of the Controlled Substances Act treats structurally similar drugs as Schedule I or II if they are intended for human consumption. In July, Sen. Dianne Feinstein introduced an amendment to the CSA that will make scheduling new synthetic drugs of abuse much easier than before. If the amendment is passed, the CSA will no longer exclusively define an analog as a drug with "similarities in chemical structure," but also as a drug with "similarities of effects." In addition, the amendment would not require the drug to be explicitly for human consumption, in a direct attempt to counteract the "not intended for human consumption" loophole. Ironically, the amendment may make critical pharmacology research more difficult to conduct. If this extensive new scheduling occurs, chemicals and drugs potentially needed in a safeguarded laboratory setting may be difficult or impossible to obtain.

The phenomenon of new and emerging drugs of abuse, from a public health standpoint, raises serious questions about our drug control strategy based primarily on prohibition and punishment. Both the California Medical Association and the California Society of Addiction Medicine (CSAM) have advocated in the past several years for legalizing cannabis for adults, citing a greater harm than good from this aspect of drug prohibition.[6,7] CSAM specifically calls for funding of adolescent addiction treatment with tax revenues derived from legal sales. A thoughtful analysis of the enormous potential morbidity associated with bath salts and spice makes our current problems with cannabis dependence in adolescents appear much more approachable.

The Dutch and the Portuguese have, in different ways, decriminalized the personal use of cannabis and other drugs. There have been reductions in these societies of drug harms and criminal activity.[8,9] With the recent full legalization of cannabis in Ecuador and in the states of Washington and Colorado, it will be interesting to see what outcomes are manifested.

The widespread synthesis of krokodil in Russia shows how far populations will go to medicate the psychological pain and disordered neurochemistry of opiate addiction. In our view, this hunger for drugs speaks to the critical importance of making substitution therapies widely available. Buprenorphine, for example, has proved effective for treating heroin and prescription opiate addiction, but MediCal and other insurers have failed to approve this treatment on a routine basis.

Can we learn from these new health

threats to evolve a drug policy based on widespread education and treatment availability, and also free of the stigmatization, marginalization and penalization that characterizes our current system? Fear is a natural and impulsive response to drug misuse, and this is the reaction that legislative bodies and law enforcement agencies have demonstrated to date. This "pharmacophobia" from authority figures may lead another segment of the population to manifest "pharmacophilia," an unquestioning love of drugs. Neither irrational fear nor unconditional love need be applied to the human experience with psychoactive drugs—let us reserve love for other humans and nature itself. What we need now is "pharmacognosis," a new and adept knowledge of these compounds and their influence on human beings and society at all levels. ◇

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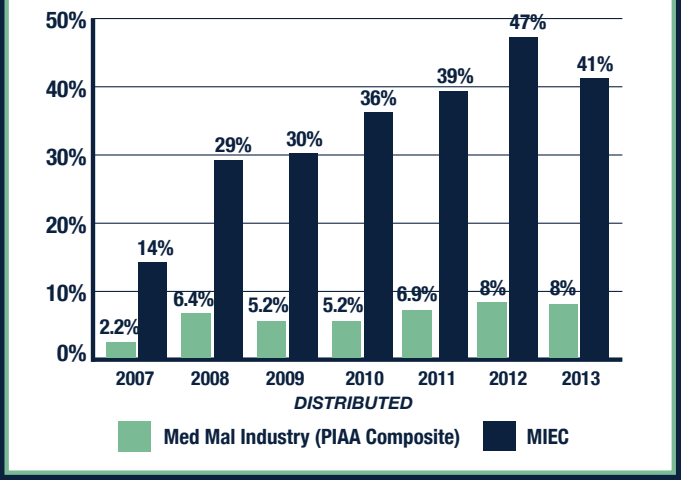

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Alcohol as a Vital Sign

Andrea Hedin, MD

We Marin County residents pride ourselves on our healthy lifestyles. We eat well, exercise and keep our weight under control. Many of us, however, drink alcohol above the low-risk limits. According to the latest national county rankings, 25% of Marin adults drink to excess, compared to 17% statewide and 7% nationally.[1]

There are probably many reasons for high alcohol use in Marin. A 2011 national survey found that Caucasians (57%) are more likely to be current drinkers than other racial/ethnic groups, including American Indians or Alaskan Natives (45%), Hispanics (43%), African Americans (42%) and Asians (40%).[2] People with more education are more likely to be current drinkers than those who are less educated (68% of college graduates versus 35% of those with less than a high school education). In addition, 74% of binge and heavy drinkers are employed full- or part-time. So in this mostly white, highly educated, highly employed county, there is higher use of alcohol.

Excessive alcohol intake contributes to negative health outcomes, including hypertension, falls, GI bleeds, sleep disorders, depression, diabetes, erectile dysfunction, neuropathies, liver disease and dementia. Of particular local interest, the risk for breast cancer increases by 7% for each additional drink per day.[3] Perhaps Marin's high rates of breast cancer are related to something other than our water.

Dr. Hedin, a psychiatrist at Kaiser San Rafael, specializes in addiction medicine.

What are the low-risk limits for alcohol? The CDC and the National Institute on Alcohol Abuse have defined low-risk drinking for men 18–64 as being no more than 4 drinks per day and no more than 14 drinks per week, or an average of 2 drinks per day.[4,5] Low-risk drinking for women 18 and over and men 65 and over is defined as no more than 3 drinks per day and no more than 7 drinks per week, or an average of 1 drink per day.

Numerous articles in medical journals have shown that brief intervention by physicians can help patients reduce their consumption of alcohol, while others confirm a reluctance among physicians to discuss drinking habits with their patients.[6-8] A recent British study found that brief intervention and screening for alcohol use isn't working because physicians simply don't ask and don't advise.[9] Physician practices were paid 3,000 pounds sterling (about $4,500) to participate in the study, but even with that financial incentive, many were unable to recruit the requisite 31 patients to participate in the study.

Nonetheless, screening and advice on alcohol consumption have proved to be both cost- and clinically effective. Of 25 preventive services ranked by the U.S. Preventive Services Task Force, taking aspirin for women over 50 and men over 40 was No. 1, followed by childhood immunizations, smoking cessation, and alcohol screening and intervention.[10] Screening and advice about alcohol consumption is more cost-effective than flu vaccinations or screenings for colorectal cancer, hypertension, cervical cancer, cholesterol or breast cancer.

Researchers do not fully understand what gets in the way of physician conversation about patients' use of alcohol, but the suspects include competing priorities, lack of belief in the importance of the conversation, one's own use of alcohol, discomfort with the conversation, and not knowing what to do with the results of the conversation. All these factors contribute to a missed opportunity to intervene.

To help physicians overcome some of the barriers to asking patients about alcohol, Kaiser Permanente Northern California has recently implemented a program called "Alcohol as a Vital

Sign." By using medical assistants as the first screeners, this program makes screening, advice and referral an easy and natural part of the workflow of the busy medical practice. In the same way that medical assistants screen patients by checking blood pressure, temperature, height and weight, they now also ask annual screening questions about alcohol consumption.

Specifically, the MAs ask how many times in the previous year the patient has had 5 or more drinks per day (for men 18–64) or 4 or more drinks per day (for all women and for men 65 and over). Then the MA asks how many days per week the patient drinks and how many drinks on average he or she has on those drinking days. If the patient is drinking at or below the safe drinking limits, the screening is complete and the physician does not need to address this issue any more than he or she would address normal temperature or blood pressure.

For patients who have a positive screen and are drinking above low-risk limits, the physician will then ask two additional screening questions: (1) In the past year, have you sometimes been under the influence of alcohol when you could have caused an accident or gotten hurt? (2) Have there been times when you had a lot more to drink than you intended to?

If the answer to those questions is a definite no, the physician educates patients about low-risk drinking limits and the link between alcohol and health risks. The physician then asks the patient if he or she is willing to reduce alcohol intake. If the answer to either of the screening questions is anything other than a definite no, the physician advises the patient that he or she may have a problem with alcohol. The physician then suggests referral to chemical-dependency or community programs for further assessment.

Alcohol consumption is screened annually for patients who had a negative initial screen, and at the next visit or at 6 months for those who are drinking above safe limits and have been advised to reduce consumption. For those who have unsafe drinking habits and are not able to reduce consumption, referral to treatment is the next intervention.

Most of our patients who have unsafe drinking habits can reduce to low-risk drinking levels. Nationally, only about 10% of drinkers will need referral to treatment. In the general population, 70% of adults abstain from alcohol, drink rarely, or drink within the daily and weekly safe limits. In addition, many of our heavy drinkers are unaware of low-risk drinking limits and will reduce their use of alcohol if advised to do so by their physician.

Given how busy we physicians are in our practices, we need to make screening easy and universal. If we say to our patients "We ask everyone," and we do in fact ask everyone about their use of alcohol, perhaps the stigma about discussing alcohol use will lessen.

Data indicates that there is increased use of drugs and alcohol in adolescents who have siblings or parents who use regularly. We also know that Marin has high rates of binge-drinking adolescents. Perhaps if we can help the adults in Marin drink within safe levels, our children and adolescents will also be protected. And perhaps, if we physicians are advising our patients on low-risk drinking, we will also find ourselves drinking less and leading healthier lives. I am convinced that this conversation about alcohol use can be done smoothly as part of regular office visits and that in the end, both our patients and our community will be healthier. ◇

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Moving Beyond the War on Drugs

Larry Bedard, MD

I am an advocate for legalizing, regulating and taxing marijuana for both adult recreational and medical use. Before I explain my reasons, some background information may be helpful. I have been involved in the War on Drugs since I served as a psychiatrist at the Navy Drug Rehabilitation Center in Jacksonville, Florida, from 1972 to 1974. In retrospect, the 30 sailors and marines we processed out of the military every month were using marijuana to self-medicate for post-traumatic stress disorder.

I subsequently worked as an emergency physician until 2005. I have written one recommendation for marijuana in my life. The patient was a personal friend who had chronic severe arthritis. His physician was willing to prescribe Vicodin but not recommend marijuana.

There are two distinct and separate issues concerning marijuana: adult recreational use and medicinal use.

When President Nixon signed the Controlled Substance Act in 1970, marijuana was temporarily classified as a Schedule 1 drug, pending the recommendation of a National Commission on Marijuana and Drug Abuse. A Schedule 1 drug has a high potential for abuse, no currently acceptable medical use, and a lack of accepted safety for use under medical supervision.

Dr. Bedard is a retired emergency physician who worked at Marin General Hospital for two decades.

Two years later, the National Commission presented a report titled "Marijuana, A Signal of Misunderstanding," which favored ending marijuana prohibition. The report states, "The actual and potential harm of use of the drug is not great enough to justify intrusion by the criminal law into private behavior, a step which our society takes only with the greatest reluctance." In a political decision, President Nixon disavowed and ignored the Commission's findings.

The political climate changed over the next two decades. In 1996, California became the first state to establish a medical marijuana program when voters passed Proposition 215, also known as the Compassionate Use Act. Since then, 18 other states and the District of Columbia have legalized medicinal marijuana.

Recent research at UC San Diego showed that marijuana was beneficial in treating multiple-sclerosis spasticity and neuropathic pain.[1] There is also growing evidence that marijuana is helpful for PTSD. Perhaps the medicinal use of marijuana was best summarized by Dr. Donald Abrams—an oncologist and member of the California Medical Association's Technical Advisory Committee on Marijuana—when he stated: "Why should I prescribe five drugs for cancer patients with anorexia, nausea, anxiety, insomnia and pain when marijuana is helpful for all five conditions?"

There are adverse effects for both acute and chronic users of marijuana. The most common acute effect is anxiety or panic attacks, particularly in naive users. Patients should be advised not to drive or use dangerous equipment while under the influence of marijuana because of mild psychomotor impairment. There is no history of any individual dying from an overdose of marijuana. Chronic adverse effects include bronchitis in heavy users. Chronic use may also precipitate schizophrenia in vulnerable individuals, particularly individuals who have a family history of schizophrenia. In addition, there may be an increased risk for lung and head and neck cancers, and regular use of marijuana in adolescents can impair their educational attainment.

Perhaps the greatest adverse effect of marijuana results from being arrested. Citizens with marijuana convictions, be they minor or major, often lose or become unable to access full employment, voting, college scholarships, public housing and other civic activities. (For a more complete discussion of adverse effects, see the California Society of Addiction Medicine's "The Adverse Effects of Marijuana" at www.csam-asam.org.)

I support legalizing marijuana from a social justice, civil liberty standpoint. The AMA's Code of Ethics states, "In general, when physicians believe a law is unjust, they should work to change the law." Clearly, when the prohibition of marijuana results in 3–4 times as many arrests, prosecutions and incarcerations of African Americans and Latinos as whites—who have a higher incidence of marijuana use—the law is unjust. Racial profiling and the discriminatory enforcement of marijuana prohibition is unjust.

In 2009, the CMA House of Delegates declared the criminalization of marijuana to be a failed public health policy. The War on Drugs has been the longest and one of the most expensive and ineffective wars in U.S. history. Roughly 800,000 people a year are arrested for illegal use of marijuana, 75% for simple possession for personal use. The enforcement of marijuana prohibition costs or wastes hundreds of millions of dollars per year. In spite of the prohibition of marijuana, it is easier for adolescents in California to obtain marijuana than alcohol. Millions of Americans break the law on a regular basis, once against demonstrating how difficult it is to legislate morality.

Americans' insatiable desire to use marijuana has also resulted in a real war on drugs, where drug cartels in Mexico and Latin American have killed tens of thousands of people in the last decade. The tremendous illegal profits from the drug cartels are corrupting and destabilizing these countries.

Recognizing the failure of current marijuana policy, in 2011 the CMA Board of Trustees unanimously endorsed and adopted as policy a white paper titled "Cannabis and the Regulatory Void," which called for legalizing, regulating and taxing recreational and medicinal marijuana.

As a father of two daughters, I am very concerned about young people's use of marijuana. I believe that legalizing and regulating marijuana is safer for our children than current policy. Drug dealers don't ask for IDs or proof of age, and they are not concerned about the potency or purity of the products they sell.

Our constitution is based on an individual's right to "life, liberty and the pursuit of happiness." As an emergency physician, I know alcohol is much more dangerous and destructive than marijuana. In 2006, there were 72,771 hospitalizations in California related to the use of alcohol, compared to just 181 admissions related to marijuana. In my 20 years as an emergency physician at Marin General Hospital, I saw only a handful of patients with a chief complaint related to the consumption of marijuana. Most were parents who had an anxiety reaction or panic attack after being coerced by their adolescent children to be "cool" like other parents who smoke marijuana. I never had a single hospital admission related to marijuana use. As an intelligent adult, I should have the right to choose marijuana to relax or socialize because it is much safer and less toxic than alcohol.

Marijuana is big business. It is estimated that marijuana grown in California is a $30 billion dollar a year industry, making pot the state's most valuable crop. Nationwide, it's estimated that Americans consume $75–120 billion worth of marijuana each year. An excise and sales tax on marijuana, coupled with taxing the six-figure incomes of people involved in the underground marijuana economy, could raise billions of dollars in tax revenue.

The use and abuse of marijuana is symptomatic of a much larger societal problem. When you add up the abuse of alcohol, tobacco, OxyContin, opiates and other illicit drugs, the United States is perhaps the most drug-dependent society in human history. In spite of the magnitude of the problem, treatment programs for drug abuse and dependency are inadequate and frequently unavailable. If a significant portion of the money raised by taxing marijuana was earmarked for use in research, education, prevention and treatment of alcohol, tobacco, opiates and other drugs, I believe that in a decade we could significantly reduce the incidence and adverse effects of all types of drug abuse.

The legalization of adult marijuana use in Colorado and Washington last November was the tipping point. In 2016, California and at least five other states will have ballot initiatives to legalize adult use of marijuana. The California Medical Association can participate in drafting the 2016 California initiative. We should use this opportunity to insist that a significant portion of the initiative's tax revenues should be earmarked for healthcare, so physicians have the resources to take care of our patients. ◇

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Putting the Brakes on Escape

Salvatore Iaquinta, MD

Open-minded as I am, I currently cannot support the use of medical marijuana.

I witnessed my cousin slowly die of metastatic cancer. He suffered intense pain from the tumor that had invaded his bones. As I watched him roll a joint, he said to me, "This makes me not care for a few hours, so I can enjoy hanging out with you." At the time, my thought was, Great, you deserve a few hours of escape, maybe more. If anyone deserves a joint, it is a person in pain and dying of cancer.

Strangely, this little vignette is the perfect example of why medical marijuana should be legal . . . and why it should not.

The argument from the "legal" camp will point out that marijuana offers both some analgesic effects and a cerebral high that helps with escaping the situation at hand. For those of us who think the medical-marijuana bandwagon needs to put on the brakes, *escape* is precisely what concerns us. Escape rarely improves things.

Frankly, any drug that gets you high will be successful in making health problems seem better, even a stubbed toe. Large amounts of alcohol have the same effect. I have seen jagged bones poking through the skin of a man so drunk he didn't realize he had a fracture. Does this man's experience mean we should prescribe large amounts of alcohol to treat severe pain? The answer is clearly no.

Dr. Iaquinta, an otolaryngologist at Kaiser San Rafael, is the author of The Year THEY Tried To Kill Me, *a memoir of his surgical internship.*

What is it about the high that causes such a problem? In a word, the user is intoxicated, which means he or she cannot drive or operate heavy machinery, among other limitations. Would you want to undergo an operation by a surgeon who smoked a joint that morning to relieve his migraine? The "pro" side will argue that opioids also cause intoxication, so treat marijuana likewise. Okay, but as an analgesic, marijuana pales in comparison to opioids, and now you've limited marijuana use to the small group of people who are not going to work and have a severe medical problem. That is hardly the aim of marijuana proponents.

Moreover, what are the severe medical problems to which marijuana is most often applied? The guy next to me at a concert offering me a toke on his pipe is not dying of cancer. When I decline, he smiles and says, "It's legal, I've got a card." Between songs, I ask what the card is for—anxiety, he tells me. I have a sneaking suspicion that his concert experience was not cause for anxiety. To add to the confusion, some marijuana users experience paranoia and panic attacks—anxiety—as side effects.

Marijuana proponents often tout treatment of glaucoma as a medical reason for marijuana to be legal. There are two problems with this argument. First, a classic study showed that inhaled marijuana's effects on glaucoma only last about three hours and only benefit 60–65% of glaucoma sufferers.[1] The second problem is that two non-euphoric cannabinoid prescription eye drops have been invented to obviate the need for systemic ingestion. If we continue to develop medicinal forms of marijuana that don't create the high, will anyone even want it?

For the sake of argument, let's drop the word *marijuana* from the discussion.

What would you say to your physician if he made this proposal: "I'd like to treat you with a drug that's not well-studied for your problem, and illegal under federal law. It makes you sleepy, hungry (you could even gain weight), and you can't drive while under its influence—in fact, you'll be intoxicated. You will be in charge of dosing it yourself, but there aren't any regulations about its potency, so you won't know exactly what you're going to get. Don't fret too much—you can't die from overdosing! But it might make you nauseated or cause you to vomit, and it can induce paranoia and, in some cases, hallucinations. The good news is there are plenty of anecdotes saying it might help in your situation. Should I write you a prescription?"

Then there is the contingency of people thrilled that marijuana doesn't require a "real" prescription. These are people of the opinion that Big Pharma is out to get us with their chemical concoctions, in contrast to cannabis, which comes straight from Mother Nature herself.

I stifle a laugh every time I hear someone reason that marijuana is "100% natural." So is cyanide, what does that have to do with anything? Cheetos and colonoscopies are wholly unnatural, yet they both have their place in society (not the same place, mind you).

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So many of the drugs we take today are based on molecules that are completely natural, in and of themselves. In fact, what pharmaceutical researchers have done over and over is to find the most important, safest ingredients, purify them and carefully dose them. They have done this so well that people spend good money to have botulinum toxin injected into their faces; they pay to be poisoned.

In the case of marijuana, there is already Marinol, a legal, prescribed form of THC. Marinol is FDA-approved for patients suffering weight loss from AIDS or nausea from chemotherapy after failing other meds. The associated studies have determined proper dosage so as to maximize the desired effects while trying to minimize side effects. Perhaps we no longer need the guy behind the counter at the pot dispensary playing pharmacist, after all.

It is "high" time Californians stop using the dying cancer patient as their poster child to score pot. I am pretty sure my cousin would not have wanted that. Instead, do the right thing: study it. Put marijuana through the same rigorous studies required of any other drug with FDA approval, consider the results, then make an informed decision. These studies are done in meticulously controlled environments, and they detail specific uses and doses for the studied medicines, along with resulting risk/benefit profiles. No FDA-approved drug is ever given to the public prior to proper testing. Why should we do so with marijuana?

Which brings me to the next option.

If procuring marijuana through lax medicinal indications is not truly helping patients, then what about just making pot completely legal? At the very least, supporters could finally be honest—they want marijuana to get high.

Our country made the same decision on alcohol, long ago. Putting aside any tiny health benefit of occasional use, alcohol is simply toxic. It causes cancer, brain and liver damage, fetal alcohol syndrome, and cardiovascular disease. If you add intoxication "accidents,"

whether from driving or falling, and then tally cases of alcohol abuse and misuse, the end of Prohibition seems to have loosed a horrific drug upon the American people. As a doctor who sees alcohol's effects, I would prefer if it were outlawed—the societal and medical costs are just too high. Yet the reason alcohol is legal is because people want the escape. People like drugs. Period.

In comparison with alcohol, marijuana seems safe: not one Friday night bar-brawl admission, nor a liver transplant, nor even a fatal overdose. However, do not confuse the lack of overdose with safety. It would be tempting—but illogical—to conflate danger and legality. If marijuana is therapeutically safe, that means it is safe to study in a controlled way. Legality, as per the FDA, comes later.

Also, please do not bother saying marijuana makes sense "economically" or to "think of the tax revenue." One can make a sound economic argument for euthanizing everyone over the age of 80; imagine the Social Security and Medicare savings! That does not make euthanasia compelling.

I also have little faith that legalized marijuana would help our poor or unemployed. I suspect pot would instantly become big business, along the lines of cigarettes. As readers may recall, Congress supported tobacco-farmer subsidies while also promoting smoking-cessation campaigns. Does anyone really believe the government will get marijuana right?

If marijuana does become legal, do we simply trust people to be responsible? I used to think everything should be legalized: if people want to destroy themselves, so be it. That was before I realized that irresponsible people are the ones who take out innocent bystanders. Witness just one mother of a close friend become a casualty of an intoxicated driver and, I assure you, alcohol and/or marijuana can lose their appeal very quickly.

Once both alcohol and marijuana are legal, ask yourself: How many more intoxicated drivers will be out there on a Saturday night? Will they somehow be more likely to claim responsibility with an extra drug in their system? Collectively, our country seems to want the freedom to increase overall drug use and, simultaneously, the ability to sue the bartender for any accident caused by a patron.

That is not any definition of responsibility. Not mine, at least. Given the choice, I will not have any part in being a bartender MD.

So go ahead. Legalize marijuana. Smoke it. Grow it. Eat it. Tax it. Regulate it. DARE to keep kids off it.

Study it. Prescribe it. Dose it. Child-proof-package it.

But admit one thing, if only to yourself—you really just want a hit. ◇

Email: Salvatore.iaquinta@kp.org

Reference

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Unique Web Address	✔	✔
Downloadable Forms	✔	✔
Google Maps for Location	✔	✔
Physician Bios	Up to 3	Up to 10
Personalized Email	Up to 3	6 or more
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Prescription Addiction: The Perfect Storm

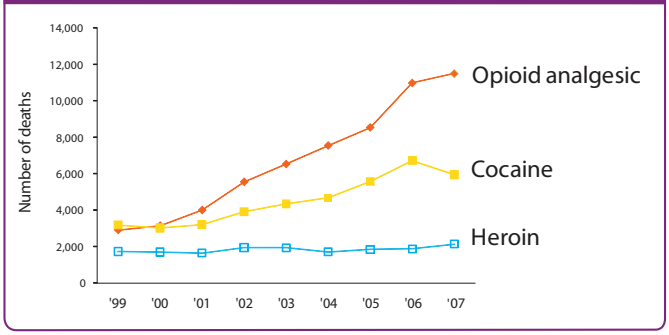
Gary Mills, PhD

Physicians prescribe opioids, patients take them, and insurance companies are willing to pay for them. The common attitude within American culture is to seek a drug ("medicine") for virtually all ills regardless of the cause of those ills. This confluence of circumstance and beliefs represents a perfect storm of prescription medication abuse, overdose and death.

With the failure of psychologists and psychiatrists to understand what addiction is or how to treat it, they have instead spent their time redefining it. In the new DSM-5 manual, addiction is referred to as a "substance-related disorder."[1] When opioids are the problem, the term is "opioid use disorder." Little has actually changed from previous DSM manuals except the emphasis on neurological etiologies and elimination of the word "addiction" because of its negative connotation.

On another front, The American Society of Addiction Medicine (ASAM) has developed a five-page definition and description of addiction.[2] It is hard to imagine this unwieldy definition providing practical assistance to the clinician. Unlike DSM-5, at least ASAM continues to use the term "addiction." Both organizations now view addiction as a disorder or disease of the brain reward system and its circuitry. This convergence toward neurological explanations of addiction may lead to biomedical solutions: in other words, more drugs.

Unintentional drug overdose deaths by major type of drug, United States, 1999-2007



Source: National Vital Statistics System

Neurological explanations of addiction are often rooted in correlational data of uncertain cause-and-effect. No one is surprised to learn that brain transmission and neurochemistry are altered during states of craving; but is that alteration the cause or the effect of the craving? Is it not just as likely that the addictive process can be a behavioral disorder that effectuates a change in brain chemistry?

Once under the umbrella of biomedical "diseases," addiction ultimately becomes the target of biomedical intervention. In some respects, the current proliferation of buprenorphine-based drugs in addiction programs may reflect this viewpoint. Treating a drug addiction with a drug is counter-intuitive, especially since the danger of cross-addiction must be ignored to even consider standard treatment of drug addiction using a drug.

In spite of academic uncertainties about the definition of addiction, clinicians in practice know that addiction does come in many forms. Drugs, alcohol, gambling, Internet, shopping, sex—even exercise—can be indulged obsessively to the detriment of our health, finances and social relations. The feeling of pleasure or relief from pain created by fulfilling the "obsession" is a powerful reward that is not easily broken. The National Institute of Drug Abuse considers addiction a brain disease that results in "an intense and, at times, uncontrollable drug craving, along with compulsive drug seeking and use that persists even in the face of devastating consequences. While the path to drug addiction begins with the voluntary act of taking drugs, over time a person's ability to choose not to do so becomes compromised, and seeking and consuming the drug becomes compulsive."[3]

Patients who suffer from persistent, non-cancer pain are especially at risk for developing an addiction to prescription opioids and/or benzodiazepines, as these drugs are typically considered first-line treatments for

Dr. Mills is the founder and director of Pacifica Pain Management Services in Napa Valley.

chronic pain. While opioid prescribers expect some physical dependence, they do not want that dependence to trigger an addictive process and will often put some preventive measures in place. A simple series of questions can guide your decision about whether or not to prescribe:

1. "Do you have a history of alcohol or drug abuse?"
2. "Are you depressed?"
3. [Asked of spouse] "Do you have any concerns about the patient's use of these medications?"

In our pain clinic's experience, these areas of inquiry are highly correlated with prescription opioid abuse and addiction. If patients or their spouses answer yes to any of the questions, reconsider opioids and suggest other analgesic alternatives. You can "prescribe" exercise, distraction, acceptance and/or pain-management counseling. For more in-depth assessment, you can use questionnaires such as the Current Opioid Misuse Measure (COMM), Opioid Risk Tool (ORT) or Screener and Opioid Assessment for Patients with Pain (SOAPP). There are also various patient-doctor agreements that clarify the rules of prescribing and ingesting controlled medications (see box below).

An addictive response is more likely in a chronic pain patient who has a prior history of addiction (of any kind), DUI citation or alcohol abuse. Insofar as social or biological genetics are concerned, patients with a family history of addiction are also at greater risk of developing problems managing chronic pain with opioids. It is useful to recognize the semantics of chronic pain:

- "This pain is killing me. I can't stand it anymore."
- "It's spreading and I can't function."
- "I can't sleep, I'm depressed, my sex drive is gone."
- "I tried exercise, but pain won't let me do it."
- "You've got to give me something or I'll lose my job, marriage, quality of life, etc."

In the absence of acute physical pathology, this is the syndrome speaking, not "pain." In pain management programs, we don't prescribe opioids to "help pain." Instead we: 1) treat the syndrome, not the pain; 2) emphasize biopsychosocial rather than biomedical approaches; 3) make self-management approaches primary and drugs secondary; 4) shift the locus of control back to the patient.

Pain is a "spectrum" perception, existing in several forms and degrees, from physical to emotional, acute to chronic, mild to severe, and simple to complex. While adequate pain control is considered a fundamental right for every patient,[4] defining "adequate" is problematic if we do not distinguish the varieties of pain. When considering duration and complexity of pain, adequate treatment will vary. Opioids may be effective at one stage and harmful at another.

Many problems can develop comorbid with chronic pain to form a pain syndrome (see box on next page). These comorbidities are interactive, and each medication given for their treatment increases the risk of more side effects and advancement of the chronic pain syndrome. Like quicksand, the more medications prescribed, the deeper the patient sinks. If no distinction is made between chronic pain and chronic pain syndromes, or if inadequate history is obtained from the patient, then medication problems and addiction are more likely to occur.

Chronic pain is entirely different from chronic pain with a syndrome. The latter is at significantly higher risk of abuse and addiction to prescription opioids, and biopsychosocial approaches are recommended.[5] When a chronic pain syndrome moves from depression to suicidal ideation, from normal usage to addiction, from deconditioning to obesity, and from insomnia to sleep-related hypoxias and apnea, the syndrome is considered to be "catastrophic." Opioids seem to worsen the syndrome at this point in its development.

There is strong evidence that chronic exposure to opioids can lead to sensitization of the pronociceptive pathways, which significantly worsens pain. Disruption of the central glutaminergic system by opioids and activation of the N-methyl-d-aspartate system are considered likely explanations.[6,7] This condition has been termed "opioid-induced hyperalgesia." Beyond this, we often see cases of persistent pain in our clinic with advanced syndromes that are no longer amenable to standard biopsychosocial team treatment. In these

Opioid Questionnaires and Contracts

COMM (Current Opioid Misuse Measure)

A patient self-assessment that assists clinicians in identifying current pain patients who are misusing their opioid medications: www.painedu.org.[8]

ORT (Opioid Risk Tool)

A brief tool that enables the physician to determine a patient's potential risk for developing aberrant behaviors when prescribed opioids for chronic pain: www.painknowledge.org.[9]

SOAPP (Screener and Opioid Assessment for Patients with Pain)

A 24-item questionnaire designed to evaluate the patient's risk for developing problems with long-term opioid therapy: www.painedu.org [10]

Physician Opioid Contracts

- www.coloradospineinstitute.com/forms/narcotic-contract.pdf
- www.kirkpatrickfamilycare.com/edu/controlled-substance-agreement.php

cases, inpatient approaches are necessary, with a shift from full recovery to "harm reduction" and lessening of biomedical approaches.

Opioids seem effective in the acute and sub-acute stages of pain. In the chronic stages, the risks of opioids outweigh their advantages. At this point, non-opioids should be considered. Stable chronic pain without a syndrome may be effectively treated with a variety of biomedical and psychosocial approaches. The decision should be to stop opioids in the chronic stages (past six months) if there is development of comorbidities such as medication escalation, depression, dysfunction in ADLs, sleep disturbance or sexual dysfunction. Addiction development is unlikely even with medical exposure to both long- and short-acting opioids when a syndrome or prior addiction history is not present.

Pain is a biopsychosocial phenomenon that has a spectrum of presentations across time, complexity, and intensity. Effective treatment of pain requires distinguishing between acute and chronic pain with and without a syndrome. The treatments for the former are primarily biomedical, whereas those for the latter are biopsychosocial.

In its early stages, pain usually presents in a physiologically predictable way, is often a symptom of underlying physical pathology, and often responds to singular biomedical treatments, including opioids. If pain persists after damaged tissue heals, opioids can play a lesser role. Physical rehabilitation, detoxification and psychosocial methods of adaptation, desensitization and fear reduction should be implemented.

If a pain syndrome continues to advance into the catastrophic chronic stage, opioids should be entirely eliminated via slow taper. Opioid-induced hyperalgesia is likely in this stage. In the post-catastrophic stage, there is little likelihood of full recovery, so harm reduction is the goal. With these late-stage cases, possible "maintenance" on agonist/antagonist drugs, longer-term placement, and substance dependence treatment will reduce symptom severity, but full recovery is not expected or likely.

Prescribers of scheduled drugs will be more effective in avoiding medication problems if they listen for the semantics of the pain syndrome and focus on treating the syndrome, not the sensory aspect of the pain. Take the time to ask a few additional questions, and consider using drug and pain questionnaires and opioid contracts. Prescribers should also obtain frequent urine drug tests.

Ultimately, physicians need to consider the risks associated with chronic exposure to opioids, make careful assessment of stages of pain and syndrome severity before prescribing, and generally avoid opioid use in the chronic stages of pain, especially when a syndrome is present. Steps in this direction can help stem the tide of the national opioid epidemic. ◇

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Typical Comborbidities Leading to a Pain Syndrome

- Learned pain/central pain disorder
- Prescription medication dependence/addiction
- Polypharmacy
- Opioid-induced hyperalgesia
- Muscular atrophy
- Cognitive-perceptual dysfunction
- Weight gain
- Sexual dysfunction
- Gastrointestinal distress and constipation
- Emotional distress
- Sleep disturbance with fatigue
- Vocational dysfunction
- Family/marital/social dysfunction
- Litigation stress
- Use of hospital emergency rooms.

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MARIN MEDICAL SOCIETY
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To All Marin County Physicians:

The Marin Medical Society has worked for more than a century to address the challenges facing local physicians and their patients. MMS owes its success to setting and resetting goals relevant to the ever-changing healthcare environment, and to the many physicians throughout the years who have provided effective leadership.

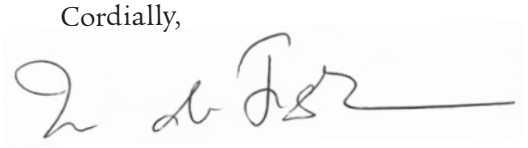
Last December, the MMS Board of Directors initiated a strategic planning effort and launched an extensive survey to solicit input from all practicing Marin County physicians. We also sought guidance from other healthcare organizations, public health agencies and nonprofits. More than 70 people completed the survey.

The MMS board subsequently used the results of the survey to create a new mission, vision and values for MMS, along with five key strategies. The resulting Strategic Plan, approved by the MMS board this summer, provides guidance to our work over the next three years. The plan focuses on how we will serve our membership and have the greatest positive impact on our community. The plan also lays out our priorities and aligns our activities so we can measure our success along the way.

The top priorities will be to help physicians lead change toward new patient-centered, physician-led models of care, and to promote a healthy medical community. MMS will also continue its commitment to developing physician leadership and organizational efficiencies for a successful and sustainable future.

MMS is fortunate to benefit from physician participation and from collaborative opportunities with other organizations. We would like to thank these physicians and organizations for their contributions to our new Strategic Plan. We believe their efforts will be rewarded with a more cohesive and relevant MMS.

Cordially,



Irina deFischer, MD
MMS President

WORKING FOR YOU

2013–16 MMS Strategic Plan

Mission

To enhance the health of our communities and promote the practice of medicine by advocating for quality healthcare, strong physician-patient relationships, and for personal and professional well-being for physicians.

Vision

Leading Marin County into better health

Values

• Advocacy • Collaboration • Integrity • Quality • Well-Being

Strategies and Goals

LEAD CHANGE IN HEALTHCARE SYSTEM DELIVERY

- Support Affordable Care Act implementation outreach and enrollment efforts to support universal access and create a culture of coverage
- Advance legislative advocacy for physician and patient-physician issues
- Support access to needed care and services

PROMOTE A HEALTHY COMMUNITY

- Reduce obesity in our community
- Improve access to healthy lifestyle resources

ADVOCATE FOR PHYSICIAN PRACTICE VIABILITY AND PHYSICIAN WELLNESS

- Improve physician practice viability
- Promote healthy lifestyle for physicians

INCREASE MEMBERSHIP 5% EACH YEAR

- Promote awareness of membership value
- Target membership retention and recruitment campaigns

STRENGTHEN MMS ORGANIZATIONAL EFFECTIVENESS AND EFFICIENCY

- Develop physician leadership
- Refine MMS governance

MMS Strategic Plan Goals and Related Actions

SUPPORT AFFORDABLE CARE ACT IMPLEMENTATION OUTREACH AND ENROLLMENT EFFORTS TO SUPPORT UNIVERSAL ACCESS AND CREATE A CULTURE OF COVERAGE.

- Optimize efforts to educate physicians and their patients about the impact of the Affordable Care Act
- Support efforts to enroll patients in insurance plans with our community partners
- Partner with existing safety net programs and organizations

ADVANCE LEGISLATIVE ADVOCACY FOR PHYSICIAN AND PATIENT-PHYSICIAN ISSUES.

- Build and strengthen relations with legislators
- Educate physicians about our advocacy role and opportunities for participation
- Support efforts to fix the Sustainable Growth Rate (SGR) and oppose reimbursement rate cuts
- Actively guide and strengthen our influence and participation in the California Medical Association

SUPPORT ACCESS TO NEEDED CARE AND SERVICES

- Promote access to specialty care
- Promote access to mental health services
- Lead efforts to educate the medical and general community on palliative and end-of-life care

REDUCE OBESITY IN OUR COMMUNITY

- Increase adoption of evidence-based healthy weight interventions in medical practices
- Identify and explore partnerships with local organizations and programs
- Educate physicians about available resources

IMPROVE PHYSICIAN PRACTICE VIABILITY

- Survey physicians regarding what practice support resources they are interested in or need
- Create action plan based on survey results
- Identify and inform physicians of available practice support resources
- Inform physicians about medical regulatory issues

PROMOTE HEALTHY LIFESTYLE FOR PHYSICIANS

- Promote physician well-being resources
- Promote awareness of self-reporting and healthy lifestyle programs

PROMOTE AWARENESS OF MEMBERSHIP VALUE

- Develop communications plan to increase physician awareness of MMS/CMA
- Identify and define “return on investment” value and benefits of membership for targeted retention and recruitment campaigns
- Promote value of participation in professional organized medicine
- Encourage physicians to participate and represent practicing physicians at the California Medical Association and the CMA House of Delegates

TARGET MEMBERSHIP RETENTION AND RECRUITMENT CAMPAIGNS

- Communicate ”return on investment” value, benefits of membership and successes
- Explore innovative dues structures and payment options
- Design and implement targeted recruitment campaigns
- Establish systems for engaging and orienting new physicians

DEVELOP PHYSICIAN LEADERSHIP

- Expand leadership development and training opportunities for active leadership
- Expand opportunities for new leadership to attend the CMA House of Delegates and CMA Leadership Academy
- Utilize the executive committee to identify and develop leadership in preparation for advancement

REFINE MMS GOVERNANCE

- Recruit qualified leadership representative of membership to the board of directors
- Evaluate and strengthen MMS policies approved by the board of directors
- Annually review the need to appoint/reappoint committees and their commission of work statements
- Review benefits and efficiencies achieved from shared administration with the Marin Medical Society

Glimpses of the Infinitesimal

Steve Osborn

Age-research scientists at the Buck Institute in Novato spend much of their time peering through microscopes at cells, proteins, neuronal fibers, microorganisms and many other objects verging on the infinitesimal. Bathed in an ever-changing sea of highly magnified images, many of these scientists develop an appreciation of the beauty of what they behold, along with an urge to share it.

These twin motives lie at the heart of the "Scientist as Artist" exhibit on display through October in the Institute's towering lobby and endless hallways. Microscopic images enlarged to the size of posters hang on the lobby's sunlit walls, transforming an elegant but barren space into a cellular barnyard (see pages 30–31). On one wall, "Chubby Angry Fat Cells" threaten to pour out of their frame and spill onto the floor. On another, senescent mouse skin stained to reveal collagen is transformed into a virtual "Lava Stream" of decaying flesh.

Many of the images display an imaginative use of color and an artistic sensibility derived in equal measure from abstract expressionism and pop art. The gradually transitioning color fields in Dr. Pooja Agrawal's "Protein Blast" (see cover) are reminiscent of Mark Rothko's expressionist canvases, whereas Wesley Minto's "HeLa Cells" is an explicit homage to Andy Warhol's quadruple portraits of Marilyn Monroe and other pop icons.

Other images are more overtly scientific. In "Star Cell," Dr. Dmitri Leonoudakis displays a solitary cultured astrocyte stained with orange-red fluorescent dye. "When I first saw this astrocyte through the lens, I was immediately struck by its beauty," he writes in the exhibition catalog. "Even though I knew this cell would not be included as data for publication, I had to take a picture to share with others."

The same kind of serendipity prompted "Omega Worm," a graceful black-and-white photo by Dr. Mark Lucanic, who works with tiny nematode worms. One day, a young worm slid into a bubble of air on a microscope slide and curled into a shape resembling the Greek letter omega, just in time to have its picture taken. Subtle gradations on the worm's body reflect its energy storage capacity.

The remaining images in this 20-picture exhibit echo these basic themes. There are expressionist visions of neural stem cells, Parkinson's disease, hermaphroditic roundworms and excess iron in the brain. In another corner are pop-inspired renditions of echocardiographs, mouse tracks, gene interaction networks and multidisciplinary studies. Somewhere in the middle are classically scientific images of insulin-secreting cells and crystallized sulfur.

A trio of judges—one artist, one scientist and one Novato city official—selected the images from 120 submitted by 65 scientists at the Buck Institute, ranging from senior faculty to graduate assistants. Almost all the images began as photos of petri-dish contents, but many were subsequently manipulated with imaging software.

The final prints on display are several feet wide and high, meaning that the images are magnified thousands of times larger than their original size. This extreme magnification leads to a certain fuzziness, but that seems a small price to pay for these illuminating insights into the smallest constituents of life.

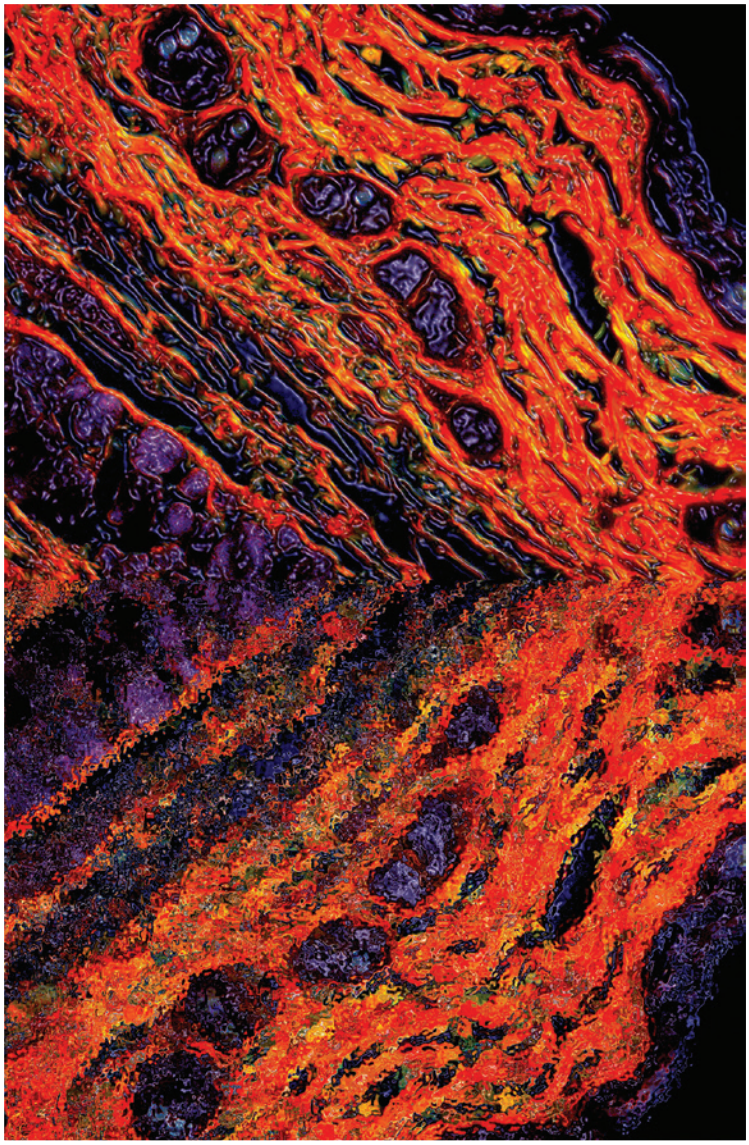
The exhibit does come with a catch. It's only open on Thursday mornings, and you can only see it if you sign up for a group tour of the Buck Institute. The extra time spent on the tour, however, has rewards of its own. The guide during my visit was well informed about the history of the Institute and the status of its current age-related research. A high point was a stop at the Institute's Learning Center, where Dr. Julie Mangada regaled our tour group with a live video feed of a waterbear (tardigrade), a minuscule animal of great interest to researchers because of its ability to withstand extreme temperature, pressure and radiation.

The video feed wasn't an official part of the exhibit, but it was just as engaging, offering a tantalizing glimpse into the world beneath the microscope. After the waterbear wandered out of the frame, our group headed back to the lobby for one last look at the vanishingly small transformed into the impressively large. ◇

Email: sosborn@scma.org

To arrange for a tour of the "Scientist as Artist" exhibit, which runs through October, visit www.buckinstitute.org or call 415-209-2000.

Mr. Osborn edits Marin Medicine.



"Lava Stream Mirroring," by Marco Demaria, PhD. Skin biopsy (mus) stained to reveal collagen, with image duplicated and reflected.

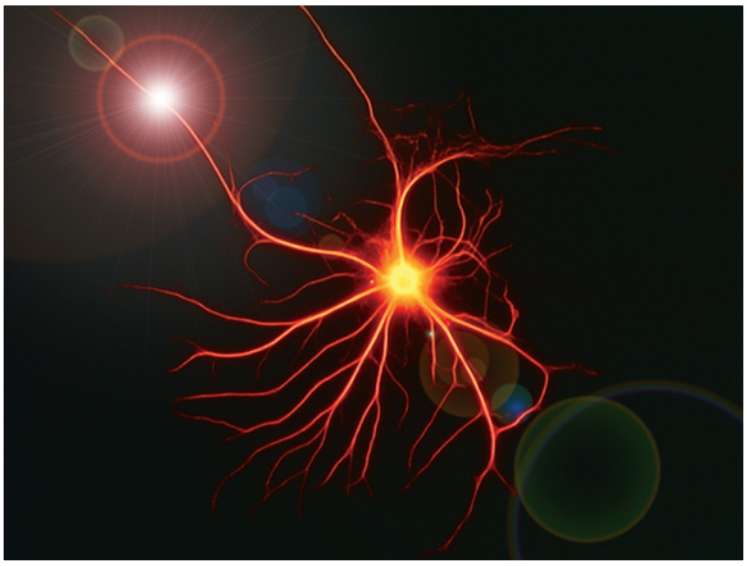
from the exhibit . . .

SCIENTIST AS ARTIST

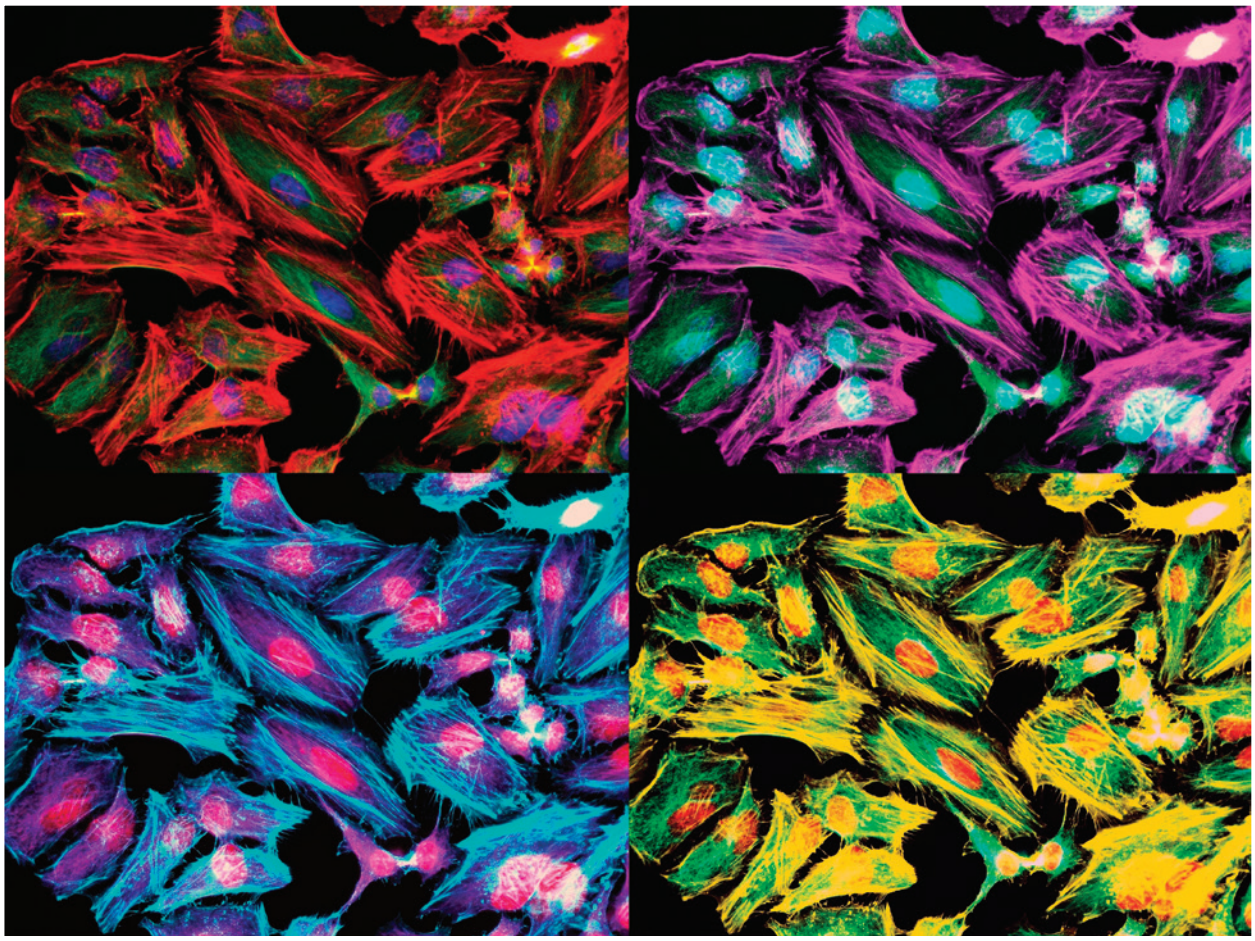
Lab Artistry Revealed

Buck Institute for Research on Aging
www.buckinstitute.org/Scientist-as-Artist

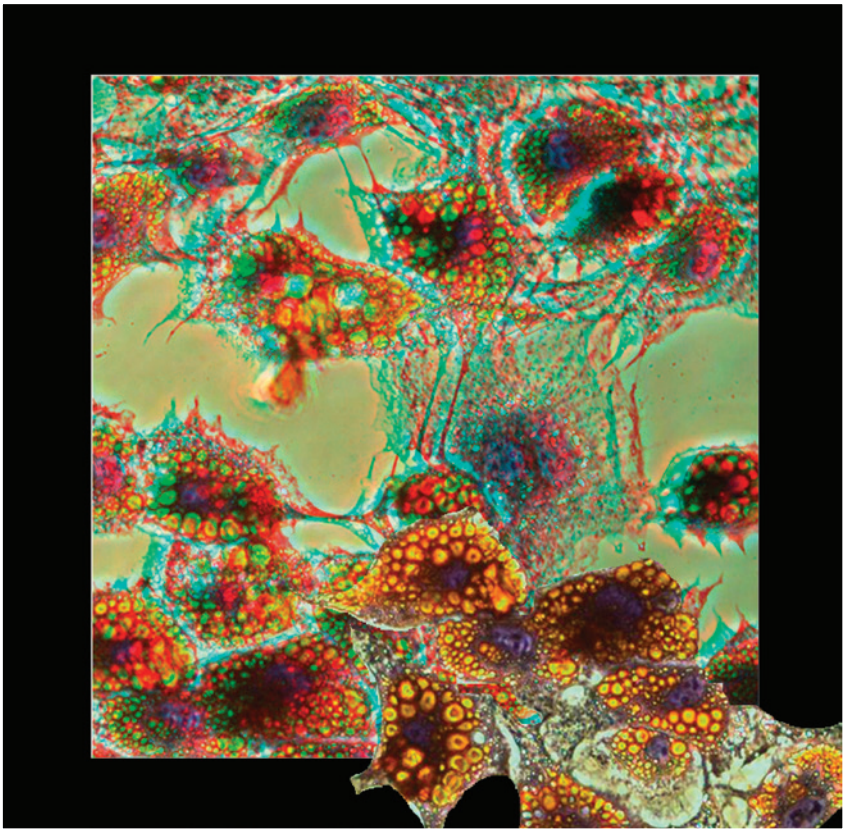
"Omega Worm," by Mark Lucanic, PhD. C. elegans nematode caught in bubble of air.



"Star Cell," by Dmitri Leonoudakis, PhD. Cultured rat astrocyte stained for the intermediate filament protein GFAP.



"HeLa Cells," by Wesley Minto. HeLa cells stained to mark DNA, microtubules and filaments.



"Chubby Angry Fat Cells," by Regina Brunauer, PhD. Lipid vacuoles within mice stem cells.

The Angel of Death

Peter Bretan, MD

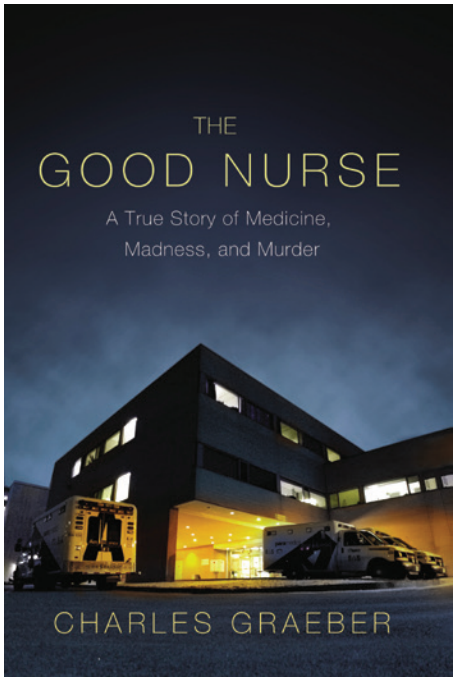
The Good Nurse, Charles Graeber, TwelveBooks (2013).

In 2004, critical-care nurse Charles Cullen pleaded guilty to murdering 19 patients in New Jersey and Pennsylvania hospitals. He had earlier confessed to killing as many as 40 patients during his 16-year career, and some authorities believe he might have killed up to 400. He was dubbed by the media as the "angel of death."

Cullen was finally sentenced to life in prison in 2006. Investigative journalist Charles Graeber spent the next six years piecing together Cullen's story, leading to the publication of *The Good Nurse* earlier this year. As Graeber explains, Cullen began killing patients in 1991, first by placing insulin in IV bags at St. Barnabas Hospital in Livingston, New Jersey, then by progressing to digoxin and other medications, injecting patients with lethal doses of these drugs. His victims ranged from 21 to 91 years old, from the critically ill to those ready for hospital discharge. Some were under his care, while others where just unfortunate to be present in the hospital during his shift.

In Graeber's account, Cullen was extremely conflicted between his uncontrolled anger at his many tragedies and failures—including the death of his mother and his alcoholism, divorce and bankruptcy—and his hunger to be needed and accepted. He was the president as well as the only male graduate in his nursing class. His job attendance was perfect, his uniform pristine. He was always willing and eager to take all the shifts no one wanted, leading his fellow nurses to exalt him as a gift from the scheduling gods. He also took the jobs most nurses avoided, such as working in the burn unit.

Dr. Bretan, a Novato urologist, serves on the MMS Editorial Board.



In contrast, Cullen submerged himself in pity at home and blamed his many tribulations on everyone except himself. He acted out feeble attempts at suicide. When interviewed after his arrest, he was unremorseful for his heinous actions and gave bizarre and contorted excuses.

While the intentional poisoning of more than 40 patients at nine hospitals in Pennsylvania and New Jersey is a horrible crime, the real tragedy is the failure of hospital administrators to stop these murders because of a pervasive corporate culture of kicking the "good nurse" down the road to the next hospital to continue his killings. St. Luke's Hospital, for example, found that no other nurse except Cullen could have discarded unaccounted vials of vecuronium, an exceptionally powerful paralytic. Cullen was offered a choice to resign. In exchange, the hospital promised to give him neutral references and said the incidents would not show up on his records. As Graeber writes, Cullen "couldn't believe it—a Catholic hospital, of all places. Saint Luke, patron saint of liability. He figured this was how you keep a Top 100 standing in *U.S. News and World Report*. He'd take the deal, but he knew he was the righteous man here." That night, Cullen moved 10 minutes down the road to Sacred Heart Hospital in Allentown, Pennsylvania, to immediately pick up a shift at his new position.

Graeber reports that all the administrators who let Cullen go maintain that they did not have reason to believe that he had harmed any of the poisoned patients at their hospital, even though these episodes stopped when Cullen left their institution. In fact, five hospitals had strong suspicions of Cullen's involvement in poisonings, but they all let him leave without a single bad reference letter.

Fortunately, in 2003, Dr. Steven Marcus, director of the New Jersey Poison Control Center, learned of several deaths at the Somerset Medical Center from lethal doses of digoxin and insulin, none of which should have been administered. He deduced serial killings of those patients by an "angel of death" and gave the hospital's medical director 24 hours to report the incidents to the police or be reported to the state's Department of Health and Senior Services. The hospital was uncooperative, claiming that the Pyxis drug container machine did not keep records long enough for the deaths to be investigated, a claim that was subsequently disproved. It took three more months and more deaths before the hospital finally fired Cullen. He was arrested later that year.

As Graeber strongly infers, a conflict of interest exists for hospitals to do a thorough internal investigation because it can harm their reputations. More importantly, because nurses are employees of hospitals, the hospital is directly liable for their actions. This situation is in contradistinction to physicians' relationships with hospitals. Physicians are independent and separate from the hospital, as either individual or group contractors, thus shielding the hospital from liability for a doctor's possible substandard and injurious actions.

Even though corporate culture is different for physicians than for nurses, the question still remains of whether a serial killer can exist in our local hospitals. Current technology helps hospitals monitor potentially lethal doses of available medications, and both nurses and physicians assess quality of care via peer review of all "sentinel" events, including lethal overdosing. Given these safeguards, the egregious killings chronicled in *The Good Nurse* could probably not occur here. Nonetheless, if we understand the corporate culture that allowed Cullen to get away with his murders, we may be able to prevent these tragedies from occurring again. ◇

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Fraud and Abuse Laws

CMA Legal Staff

Note: *Throughout this article, you will find references to "CMA On-Call," the California Medical Association's online health law library. On-Call documents are available free to members at www.cmanet.org/cma-on-call. Nonmembers can purchase documents for $2 per page.*

Most physicians strive to work ethically, providing high-quality medical care to their patients and submitting proper claims for payment. Unfortunately, the presence of some dishonest individuals has spawned new laws that combat fraud and abuse in the healthcare system. This trend intensified with the passage of the Affordable Care Act in 2010.

The laws covering "fraud and abuse" broadly prohibit several activities that physicians may have undertaken in good faith in the past. Depending on the law, violations may be punishable by criminal and civil penalties, civil monetary penalties, payment suspensions, mandatory or discretionary exclusion from state and federally funded health programs (including Medicare), and other sanctions, such as licensure actions or asset forfeitures.

The most important fraud and abuse laws that apply to physicians are described below.

Anti-Kickback Laws

Both California and federal law prohibit kickbacks and fee splitting by physicians and other healthcare providers. The federal anti-kickback statute prohibits knowingly and willfully offering, soliciting, paying or receiving remuneration (essentially anything of value), directly or indirectly, in exchange for or to induce patient referrals for which payment can be made under a federal health program, or to induce recommending or arranging for the purchase of items or services covered by a federal health program.

The California anti-kickback law is similar to the federal statute. California prohibits licensed healthcare professionals from offering, accepting or receiving consideration (in the form of money or otherwise) as compensation or inducement to refer patients, clients or customers. Unlike the federal statute, which only applies to referrals of patients whose medical services are paid by a government healthcare program such as Medicare, the California statute applies to referrals irrespective of the payor (including commercial payors).

For more information on anti-kickback laws, see CMA On-Call document #1151, "Prohibitions Against Kickbacks and Fee-Splitting."

Self-Referral Laws

Both state and federal law prohibit physicians from referring patients for goods or services in which the physician or physician's immediate family has a financial interest, with some exceptions.

In general, federal self-referral laws, known as the Stark Laws, prohibit a physician from making a referral to an entity for the provision of certain "designated health services" (including hospital inpatient and outpatient services) if the physician has a financial relationship with the entity, unless the arrangement fits within an exception. If the self-referral prohibition applies and an exception is not applicable, the physician may not make a referral to the entity for designated health services covered by Medicare, and the entity may not, directly or indirectly, bill for any designated health services resulting from a prohibited referral.

California also broadly prohibits physician self-referral of patients pursuant to the Physician Ownership and Referral Act of 1993, also known as the Speier Act. The California statute applies to all patients regardless of who pays for the healthcare services. California's statute also provides a broad exception allowing physicians to refer patients to a hospital with which they have a financial relationship, so long as the hospital does not pay the physician for the referral and any equipment lease between the parties satisfies certain requirements.

For more information on self-referral laws, see CMA On-Call document #1156, "Self-Referral Prohibitions (Federal and California)."

Civil Monetary Penalty Law

The federal civil monetary penalty law prohibits hospitals from knowingly paying, directly or indirectly, physicians to "reduce or limit services" provided to Medicare and Medicaid beneficiaries who are under the direct care of the physician.

According to the Office of the Inspector General (OIG), which enforces

the law, whether the services are medically necessary or prudent is irrelevant under the civil monetary penalty statute. The OIG also believes that payments to incentivize use of comparable but less-expensive items (i.e., product substitution) violate the law, because they limit choices. Violations are punishable by fines of up to $2,000 per patient, which can be assessed against both the hospital and the physician.

While there are guidelines, exceptions and safe harbors to the anti-kickback, self-referral and civil monetary penalty laws, these areas are ripe for government enforcement. As such, it is critical that physicians obtain counsel with respect to any physician-hospital alignment arrangement. For more information, see CMA On-Call document #1103, "Fraud and Abuse (Federal and California Law)," and #0317, "Physician Alignment Models."

Antitrust Laws

Antitrust laws prohibit conduct that has unreasonable anticompetitive effects. These laws generally prohibit conduct by or among two or more competitors, such as contracts, combinations and conspiracies that unreasonably restrain trade, or by single entities that become so large that they become a monopoly. The basic objective of antitrust laws is to eliminate practices that unreasonably interfere with free competition, so that each business has a fair opportunity to compete on the basis of price, quality and service. These laws should be considered when physicians, hospitals, payors and other providers integrate, collaborate or otherwise coordinate their activities.

Because of the important economic underpinnings reflected in antitrust laws, penalties for violating them are significant. Criminal violations of the Sherman Act, for example, are felonies punishable by imprisonment for up to three years and/or fines of up to $350,000 for individuals and $10 million for corporations per violation. A criminal conviction virtually assures civil liability. Judgments for civil violations often run in the millions, particularly since a private party can recover three times the amount of damages actually sustained and recover other costs and attorneys' fees incurred in prosecuting the action—fees which often exceed a million dollars.

Antitrust violations can arise, for example, if a physician-hospital alignment arrangement becomes so large that it is exercising substantial market power in the relevant area. Similarly, to the extent a hospital and a physician organization are otherwise competing organizations, an alignment between them could conceivably be challenged as a restraint of trade unless they are sufficiently integrated for purposes of the antitrust laws.

For more information on antitrust laws, see CMA On-Call document #1000, "The Antitrust Laws: What Physicians Can Do." For more information on antitrust laws as they relate to Accountable Care Organizations, see CMA On-Call document #0300, "Legal and Practical Considerations Concerning Accountable Care Organizations (ACOs)."

Tax-Exempt Status

Tax laws are implicated when a hospital, or a 1206(l) medical foundation, is tax-exempt pursuant to IRS Section 501(c)(3). Healthcare issues have received priority by IRS enforcers for a number of years. In general, in order to qualify for tax exemption under Section 501(c)(3), an entity must be organized and operated exclusively for charitable purposes, with no part of its earnings going to the benefit of a private shareholder or individual. The IRS looks to a number of factors when evaluating the qualifications of a healthcare organization for tax exemption.

For more information, see CMA On-Call document #0305, "Legal and Practical Considerations Concerning Medical Foundations." Physicians are strongly urged to consult with qualified legal counsel because the requirements for qualification and maintenance of Section 501(c)(3) tax-exempt status are extremely detailed and complex. ◇

NEW MEMBERS

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Kaiser Permanente San Rafael

Gary Mizono, MD

Note: *Each issue of Marin Medicine includes a self-reported update from one local hospital or clinic, on a rotating basis.*

As we prepare for the greatest change in U.S. healthcare since Medicare, I am extremely proud of our Kaiser Permanente San Rafael Medical Center physicians and healthcare teams. Our excellent care and service continually achieve top rankings among the industry's most respected organizations and consumer groups—and most importantly, our members.

For the fifth straight year, Kaiser Permanente is the only California health plan to earn a four-star rating for overall quality (highest possible), based on the California Office of the Patient Advocate 2013 report cards. These report cards give Kaiser Permanente the top rating for patient satisfaction among the state's largest health plans and PPOs, based on national standard-of-care measures. In addition, the San Rafael Permanente Medical Group received four-star recognition among physician groups.

Our San Rafael hospital was among 18 KP Northern California hospitals to receive a top "A" rating from The Leapfrog Group, which graded more than 2,500 U.S. hospitals in its annual safety report. Through our team-based approach to care, KP Northern California has significantly reduced hospital-acquired pressure ulcers, central line infections, and deaths from serious heart attacks and stroke.

Dr. Mizono, an otolaryngologist, is physician-in-chief at Kaiser Permanente San Rafael.

By bundling specific drugs and emphasizing lifestyle changes, Kaiser Permanente's award-winning PHASE treatment protocol (preventing heart attacks and strokes everyday) is improving outcomes for patients most at-risk for heart disease. Over a 10-year period, PHASE efforts resulted in a 24% decrease in heart attacks for our members. Today, our Northern California members have a 30% lower risk of dying from heart disease than the general public.

Our health plan is also saving lives through more assertive sepsis care. Within the first six hours of hospital admission, patients who arrive with a potentially deadly infection are screened and treated. In the first year we implemented this program, sepsis mortality decreased by 40%, and hospital stays for sepsis patients were reduced 17%.

So far this year, we have received several additional accolades. This spring, for example, our San Rafael stroke team got the American Heart/American Stroke Associations' highest rating—the "Get with the Guidelines" Gold Plus Achievement Award and Target Stroke Honor Roll recognition for meeting the rigorous criteria necessary to provide highest quality stroke care.

For the second straight year, our Medicare plans in California received a five-star rating from the Centers for Medicare & Medicaid Services. We are the only California health plan, and one of only 11 plans nationwide, to receive this top rating. And for the sixth successive year, the J.D. Power and Associates Member Health Plan Study awarded Kaiser Permanente its highest member satisfaction rating.

In recognition of our worksite wellness efforts, KP San Rafael was recognized for the eighth straight year as one of the *North Bay Business Journal's* "Best Places to Work," based on survey ratings by our employees at all San Rafael and Petaluma facilities. The journal also recognized our medical center as one of the healthiest companies in the North Bay, highlighting our employees' increased participation in our award-winning "Live Well Be Well" program.

As the nation begins implementing the Affordable Care Act, Kaiser Permanente's course is clear. Building on our current foundation of excellence, we'll keep leading the way with clinical best practices, and we'll provide five-star quality for our members.

Locally, we look forward to completing several building projects on our San Rafael campus. Our new emergency department will open in June 2014, and we will continue contributing to the Marin County EMS program as an Emergency Department Accepting Trauma (EDAT) and a STEMI receiving center for heart attacks. Upon completing the ED project, we will be improving our diagnostic services on campus.

Patients will continue to benefit from Kaiser Permanente's unparalleled integrated model, advanced medical systems, and preventive services—and we welcome the opportunity to improve the total health of new members who access our care through the Affordable Care Act. ◇

Email: gary.mizono@kp.org

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